

**ABSTRACT**

An embodiment of the present invention is disclosed to include a three stage scalable switching network that can be built from a common module. Further disclosed are methods for building switching network  $v(k, n, m)$  from a common module comprising a  $(n \times k)$  input switch, a  $(k' \times k')$  middle switch, and a  $(k \times n)$  output switch..